

Activity 1

An Earthquake in Your Community

Think About It

Page G122

Date

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- If you have experienced an earthquake, describe your most vivid memory.
- If you have not experienced an earthquake, what would you expect to see, feel, and hear?



WHAT DO YOU THINK?

Activity 1

Investigate Part C

Page G124

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1. Draw a diagram that shows how your Slinky moved.

2. Draw a diagram that shows how your Slinky moved.

3. Which type of wave arrived at the other end first (which one was faster)? Which one arrived last?

4. Use pages G128-129 in your textbook to complete the table.

Type of wave	Alternate name	Description of motion	Arrival time	What material(s) it can move through

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5. Write a paragraph to describe the types of seismic waves.

Activity 1

Digging Deeper

Pages G125-128

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Learning Objective: Through speaking and writing, SWBAT describe and earthquake, and differentiate between the focus and the epicenter of an earthquake, using academic language.

Earthquake

a sudden shaking in the Earth caused by the quick release energy

Seismic wave

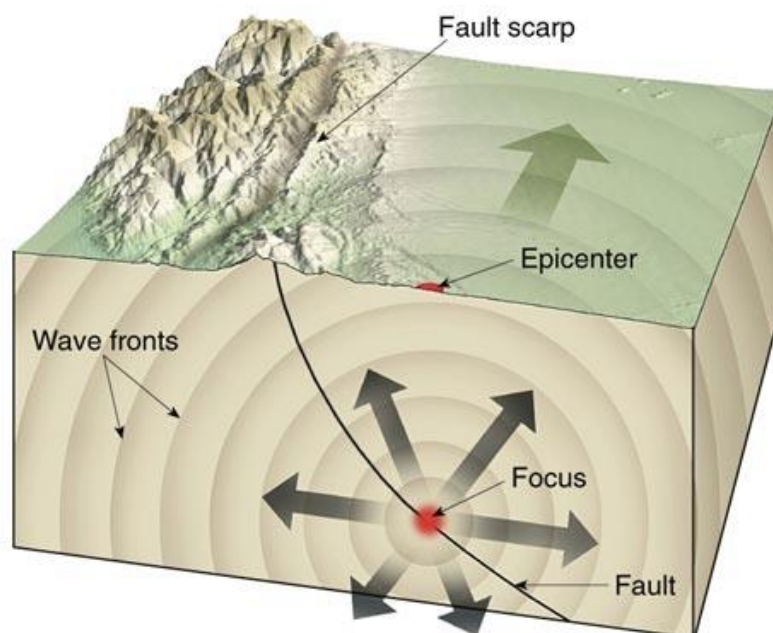
an earthquake wave

Focus

the point under the Earth's surface where an earthquake begins

Epicenter

the point on the Earth's surface directly above the focus of an earthquake



http://highered.mcgraw-hill.com/olcweb/cgi/pluginpop.cgi?it=swf::640::480::/sites/dl/free/0072402466/30425/16_04.swf::Fig.%20%2016.4%20-%20Focus%20of%20an%20Earthquake

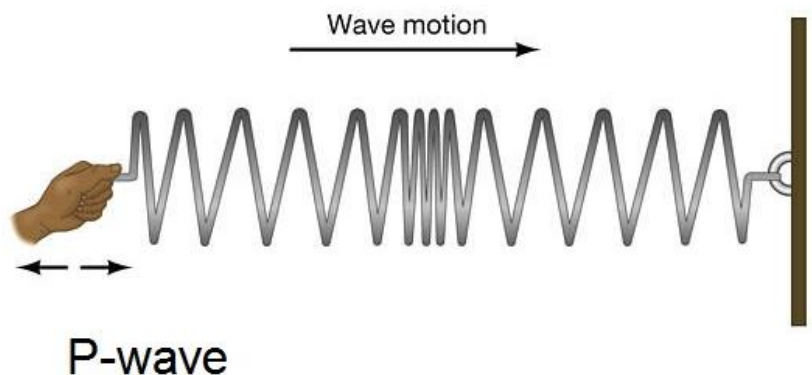
Learning Objective: Through speaking and writing, SWBAT compare and contrast the three types of seismic waves using academic language.

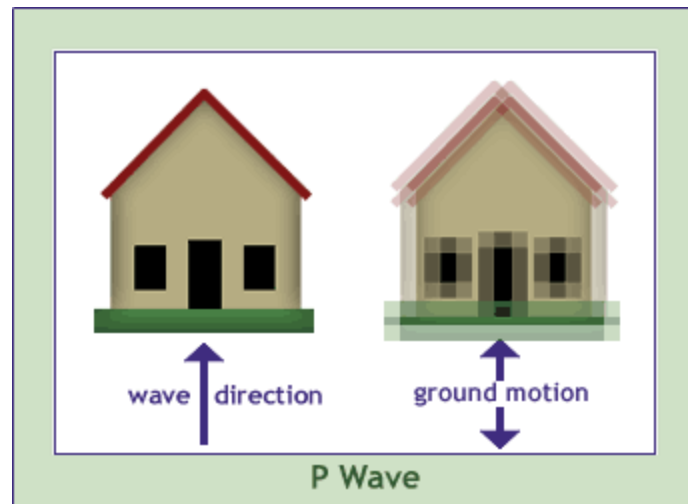
Types of seismic waves

- primary (P) waves
- secondary (S) waves
- surface waves

Primary (P) wave
(compressional wave)

expand and compress rocks in the same direction as the wave is moving





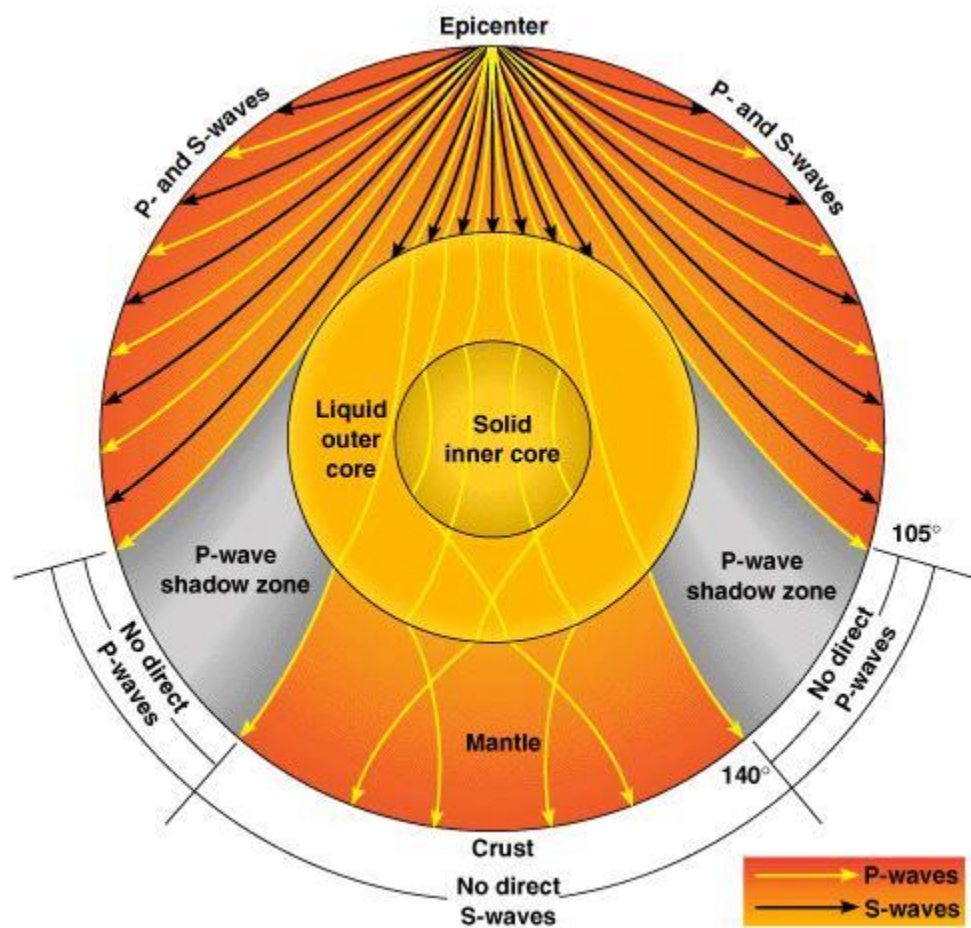
<http://www-rohan.sdsu.edu/~rmellors/lab8/l8pwav2.htm>

http://www.classzone.com/books/earth_science/terc/content/visualizations/es1002/es1002page01.cfm?chapter_no=visualization

http://www.geo.mtu.edu/UPSeis/images/P-wave_animation.gif

P waves are the first to reach a location away from the focus

They travel through solids, liquids, and gases

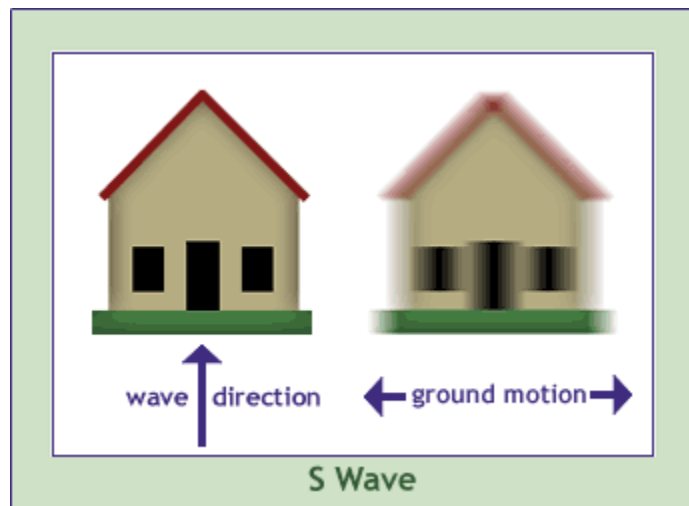
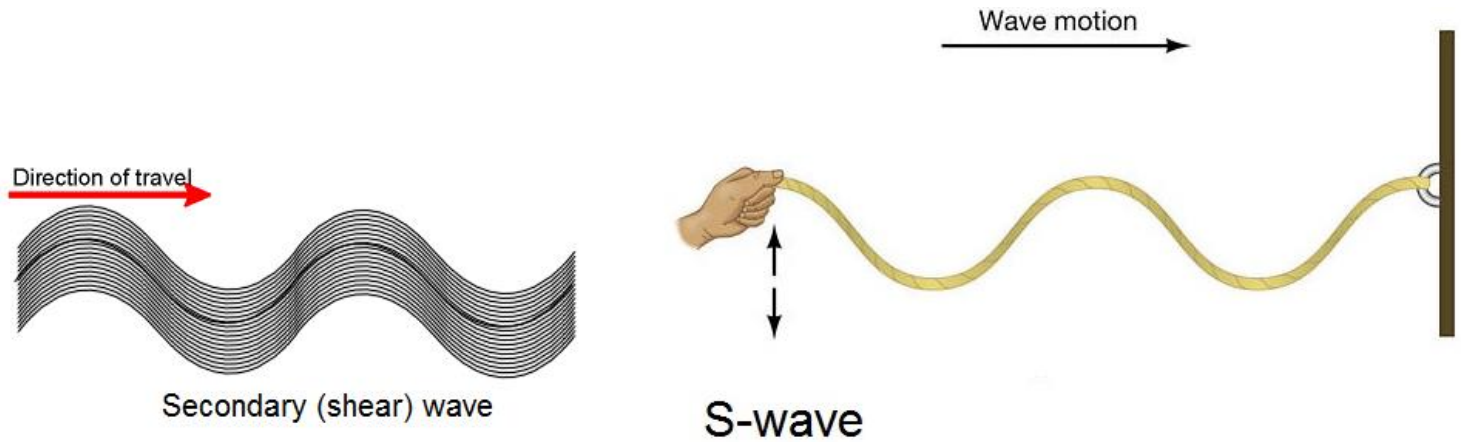


<http://www.absorblearning.com/media/item.action?quick=9X>

http://www.classzone.com/books/earth_science/terc/content/visualizations/es1009/es1009page01.cfm?chapter_no=visualization

Secondary (S) wave
(shear wave)

shakes the ground back and forth at right angles to the direction the wave is moving



<http://www-rohan.sdsu.edu/~rmellors/lab8/l8pwav2.htm>

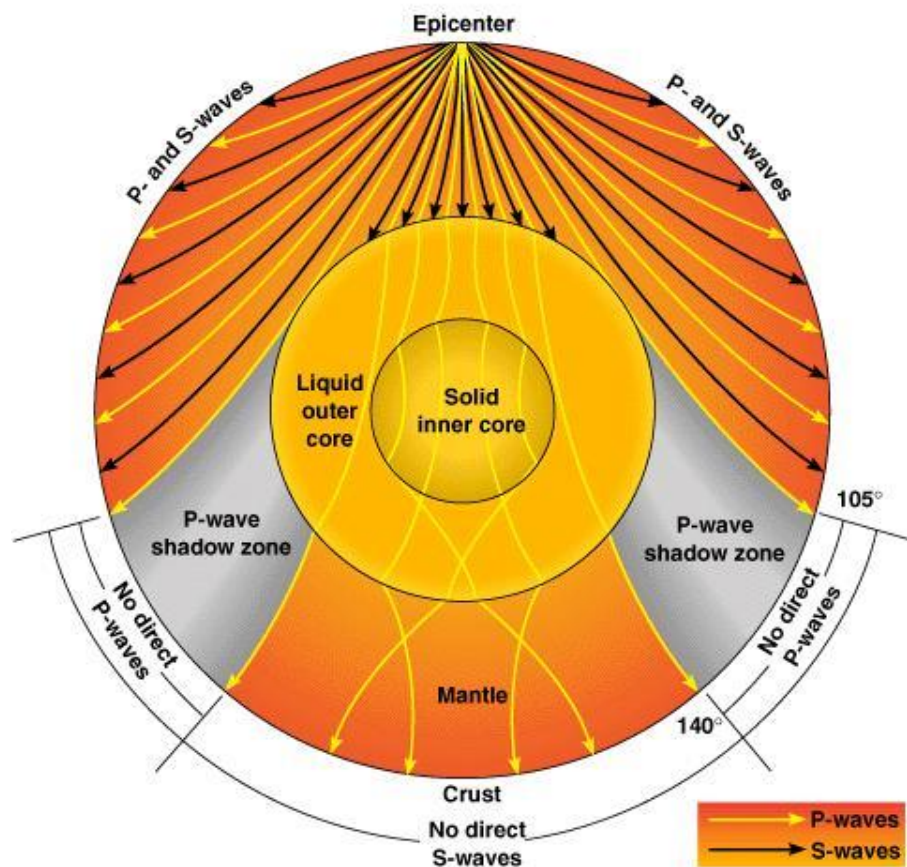
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http://www.geo.mtu.edu/UPSeis/images/S-wave_animation.gif

S waves arrive at a location after P waves

They do not travel through liquids,
like the outer core of the Earth

S waves can only travel only
through solids



http://www.classzone.com/books/earth_science/terc/content/visualizations/es1002/es1002page01.cfm?chapter_no=visualization


http://www.classzone.com/books/earth_science/terc/content/visualizations/es1009/es1009page01.cfm?chapter_no=visualization

Surface wave

a seismic wave that travels along the surface of the Earth

They travel slower than S waves, so they are last to arrive

Surface waves usually cause the most movement at Earth's surface

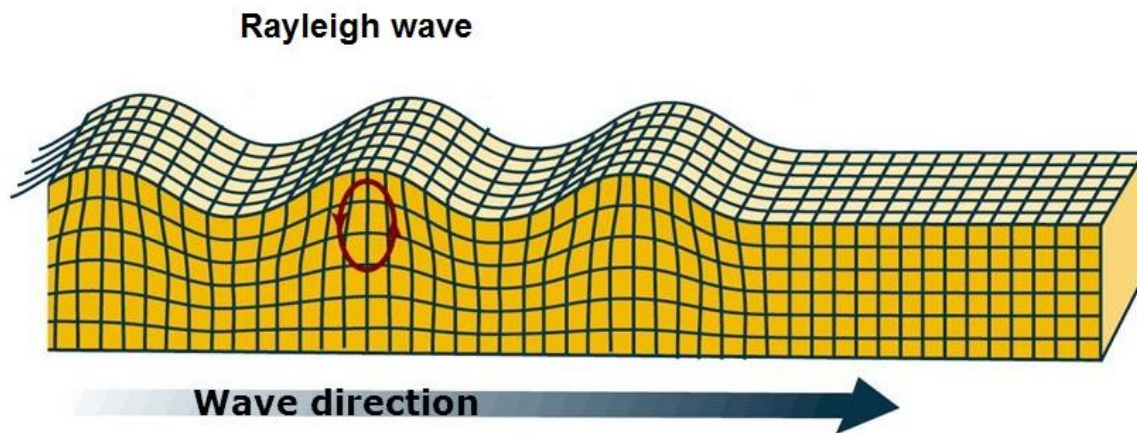
 they cause the most damage

Types of surface waves

- Rayleigh wave
- Love wave

Rayleigh wave

moves in an up-and-down rolling motion

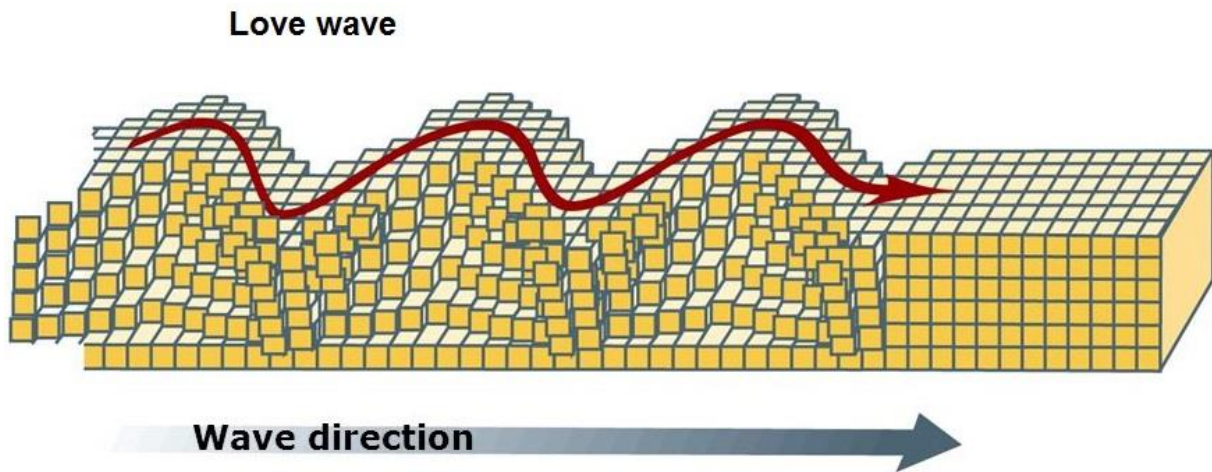


<http://web.ics.purdue.edu/~braile/edumod/waves/Rwave.htm>

<https://www.youtube.com/watch?v=WZ3EaEay3YM>

<https://www.youtube.com/watch?v=6yXgfYHAS7c>

Love wave moves in a sideways motion



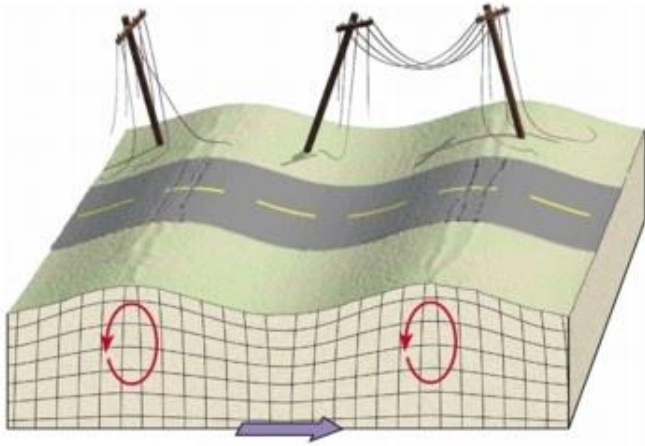
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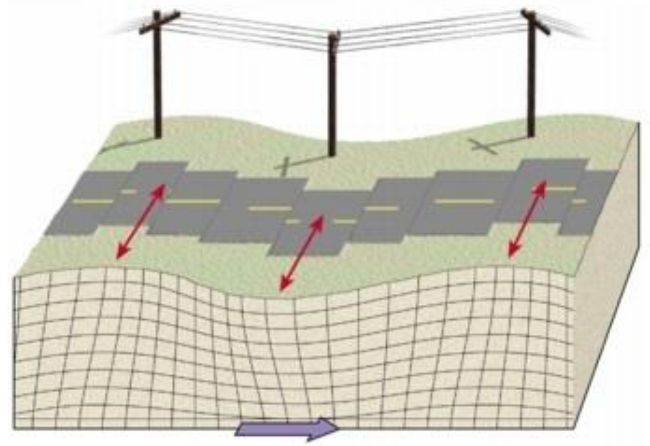
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<https://www.youtube.com/watch?v=bFK0azDTNvE>

https://www.youtube.com/watch?v=xCxbedH5_G4



Rayleigh wave



Love wave

Activity 1

Check Your Understanding

Page G128

Date

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1. What is an earthquake?

2. What is the relationship between the focus and the epicenter of an earthquake?

3. Draw and label diagrams to show the differences between P waves, S waves, and surface waves.

4. Rank P waves, S waves, and surface waves in order from fastest to slowest.

5. How have scientists used seismic wave information to determine the interior structure of the Earth?